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CC: "John Ricker" <ENV012@co.santa-cruz.ca.us>, "Chris Coburn" <Christopher....
Date: 6/5/2009 3:01 PM
Subject: Acidic water in McEnery Road Spring (County of Santa Cruz Environmental Health Service, station ID 073S, 37deg. 03' 06.53" N lat. 122deg. 03' 29.96" W long.)

Mary, as requested I've examined 19-years of record and have compiled the following statistics:

96 records
Period of record June 1, 1990 - April 20, 2009
pH mean 7.43 +/- 0.58
12 records of pH <7
79 records of pH >7
Last record of pH <7 August 9, 2006

The general trend seems to be that slightly acidic conditions occur in years of above normal rainfall. This water almost always has low electrical conductivity. It's about 1/5-1/4 the conductivity of its receiving water, Zayante Creek. This suggests to me that this spring water is fairly young and has not had sufficient time to degas atmospheric carbon dioxide and to dissolve buffering minerals from the bedrock through which it passes (Santa Margarita Sandstone). If enough carbon dioxide is present in a poorly buffered water, it will have a slightly acidic pH. When or if this happens again, a complete mineral analysis including dissolved CO2 will be done.

Also, we see that results were compared to two beneficial uses (1) non-contact recreation AND (2) waters not mentioned by a specific beneficial use. Could you explain why they were compared to the latter as all of the exceedances were a result of that analysis? Unless we're misunderstanding, the waters are covered by the non-contact recreation beneficial use, which resulted in 0 exceedances.

Bob

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